



RESEARCH AND
ENGINEERING

THE UNDER SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301

Executive Registry

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February 24, 1982

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Admiral Bobby R. Inman, USN
Deputy Director for Central Intelligence
Washington, D.C. 20505

Dear Bobby:

Attached you will find a copy of the National Academy of Sciences proposed study on "National Security Regulations of Technology Transfer and Scientific and Technological Activities of Universities and Professional Societies" I mentioned on the phone. I believe it will be helpful if they act as an honest broker. I have, however, urged them to get outside support in order to avoid any appearance of a conflict of interest.

Sincerely,

NO REFERRAL TO OSD. WAIVER
APPLIES

Shel

Attachment

cc: Frank Press

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NATIONAL ACADEMY OF SCIENCES

2101 CONSTITUTION AVENUE
WASHINGTON, D. C. 20418

February 4, 1982

SUMMARY OF PROPOSED STUDY OF NATIONAL SECURITY REGULATIONS OF TECHNOLOGY TRANSFER AND SCIENTIFIC AND TECHNOLOGICAL ACTIVITIES OF UNIVERSITIES AND PROFESSIONAL SOCIETIES

The transfer of militarily, and to an extent economically, sensitive products, capabilities, know-how and knowledge to the nation's adversaries and competitors has attracted increasing public attention. The reason is the notable strides made by the Soviets and the Japanese (for example) in successfully competing with us in military or economic spheres, respectively -- strides made possible in large measure by their apparent ease in harvesting the fruits of American research and development.

Such technology transfer can take many forms including the overt and clandestine acquisition of hardware and technology, and collection of data and information in the open and secret literature, by means of person-to-person exchanges, through attendance at conferences, symposia and other open forums and gatherings of scientists and engineers, and through their nationals' participation in university research and education.

Traditional means by which the government seeks to protect its vital stake in promoting the nation's security and technological leadership include classification of military and diplomatic secrets; surveillance and controls of foreign visitors through visa and travel restrictions; a variety of foreign trade treaties and agreements; and restrictions, outside the military and intelligence security classification systems, having to do largely with export control regulations. Such export controls include the following:

- * International Traffic in Arms Regulations (ITAR), administered by the Department of State under the Arms Export Control Act of 1976;
- * Export Administration Regulations (EAR), administered by the Department of Commerce under the Export Administration Act of 1979;
- * Provisions of the Invention Secrecy Act of 1951, administered by the U.S. Patent Office; and
- * Regulations of the Department of Energy, under the Atomic Energy Act of 1954, especially as they involve the so-called "born secret" doctrine as applied to nonmilitary atomic energy research.

While not the principal regulator in any of the above, the Department of Defense is the principal source of military and technological expertise and advice to which the various enforcement agencies must, by law, turn.

There is a particular sub-set of the general issue that poses a dilemma for the government and the university-based scientific and engineering community -- one that both parties, and the country generally, have a high stake in resolving in a mutually constructive and satisfying way; and one, unhappily, in which recent developments point more toward polarization than consensus. At risk of oversimplifying, the issue can be stated as follows:

On the one hand, cognizant government officials believe that there is a category of unclassified research results, in specific fields, whose free and open publication or dissemination, especially to unfriendly foreign nationals, could pose an undue threat to the national interest and, at times, the national security. Indeed, they have evidence that the Soviet military posture has been notably strengthened by access to such information in the past. Accordingly, they believe it is essential to control foreign access. (Examples of areas that have caused recent concern include work involving magnetic bubble memory, laser-optics and inertial confinement fusion, very high speed integrated circuitry (VHSIC) and computer science and mathematics research concerning principles applicable to cryptology.) On the other hand, many scientists and engineers in academia hold that free and open communication and assembly are imperatives of our society. They believe such open communication is the sine qua non of creative environment that promotes and perpetuates the strength and vitality of the educational and scientific endeavors upon which our technologies are based.

Over the past two-to-three years, efforts by government agencies to limit or restrain in advance open dissemination of certain research results through the enforcement of one or more of the above-mentioned regulations appear to have intensified and accelerated. The participation of foreign students and scientists in certain open conferences, laboratories and classrooms, and the desire of scientists to openly publish or disseminate their findings, have therefore begun to engage the active interest of the enforcement arms of the above mentioned agencies. As a result, there is today a growing sense of confusion and alarm within the academic scientific and technological community.

From our soundings among the government and academic communities, we conclude that a balanced and objective assessment of the issues is both necessary and timely and that the Academy can serve as an "honest broker" in such an assessment. The interdependence of government and the universities in advancing science, technology and national security requires the prevention of a serious breakdown of mutual confidence. We therefore propose to undertake a review involving the following elements:

- * A general review of the application of the principal, relevant regulatory policies and practices with special emphasis on the ITAR and EAR, in two or three characteristic fields of science and technology (e.g., cryptology, very high speed integrated circuits, artificial intelligence) to be selected by the study panel in consultation with the sponsors.

- * A review of the principal policy and operational concerns of the respective government agencies, universities, scientific societies and researchers. Industrial issues will not be considered. The goal is to identify those issues where common agreement exists, to expose where apparent differences of goals are based essentially on misperceptions and misunderstandings, and, perhaps, to narrow and sharpen the issues in which genuine differences exist. Implicit in this task is the belief that there may exist a number of specific concerns of scientists and universities that are based either on a misunderstanding of agencies' intentions or a failure of such agencies to communicate their intentions clearly.

These first two tasks will involve an exploration of: (i) the intended and proper reach of the regulations vis-a-vis various categories of science and technology; (ii) the identification of certain areas of science and technology that can be mutually

understood to be outside the operation of ITAR and EAR; (iii) some approaches to providing more certainty and predictability into the enforcement procedures so that universities and individuals whose work or activity may be subject to regulation are better able to comply; and (iv) some alternative procedures, if possible, that might prove acceptable to all of the concerned sectors.

* A rigorous evaluation of a number of critical issues must also be undertaken in order to improve both the effectiveness and general credibility of our export control regulations as applied to science and technology. Discussions held with representatives of the involved agencies as well as the affected scientific and university community have yielded the following examples:

(i) What do we know about the innovation and technology transfer process that will contribute to the review and improvement of export control policies; what is the appropriate balance between policies to stimulate and to protect critical technological leadership?

(ii) What are the practical problems with and alternatives to requiring universities to enforce compliance by its students, faculty and visitors? Are the essential qualities of the university that assure our science and technology base compromised by certain forms of regulation?

(iii) What kinds of scientific and engineering advice would contribute to the development and enforcement of more effective control regulations?

(iv) What sort of control on information transfer is it realistically possible to achieve in light of the number and diversity of scientists and engineers in the academe?

Membership of the study panel will include wise, distinguished individuals deeply conversant with the goals of science, the nature of universities, and of national security concerns, and with expertise in a variety of scientific and engineering disciplines, R&D management, trade regulation and control, and constitutional law. Liaison members representing the respective government agencies and scientific institutions should also be appointed to assist the panel in its deliberations and in devising effective means for communicating its final conclusions and recommendations.

A detailed plan of work for the study has been formulated, which must be reviewed, revised and adopted by the panel, once appointed. In general, the study will begin with sessions in which the committee will receive overview presentations of issues, national objectives, laws and procedures from the respective government agencies and the scientific and technology community, including, where relevant, industry as well as academe. The balance of the committee's work and deliberations will be conducted primarily in private.

Briefings by the agencies, including classified briefings where necessary, the development of case studies and, if needed, the commissioning of analytical papers, in-depth deliberations of subcommittees and the full panel, and a 5-day workshop to draft the final report are examples of the techniques to be used. A combination of consultants and one or two full-time professional and administrative staff members dedicated to the effort will be employed to aid the panel.

The overall effort will be 12 months in duration, at a cost of approximately \$330,000. Government funding is requested. The final product will be a public, unclassified report of the panel's findings and recommendations. A progress report will be prepared at the end of the first six months.